

## Long-term Cardiorespiratory Effects of Mediterranean Diet and Exercise Training Intervention in Sedentary Older Participants

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**Introduction:** The cardio-protective benefits of exercise and healthy diets, especially Mediterranean Diet (MD) are well established. Combining MD with exercise training has been recently shown to reverse cardio-metabolic risk in ageing adults. This study tested whether the exercise and MD improvement in cardiorespiratory capacity are sustained after six-months in older participants.

**Methods:** With institutional ethical approval, seventeen sedentary healthy participants (age =  $54.7 \pm 3.5$ ) completed eight-weeks of moderate aerobic exercise training alone or combined with MD, assessed by MD adherence questionnaire. Cardiorespiratory capacity was assessed by ventilatory threshold (VT) before, after and six-months following the completion of training. Mixed-design ANOVA was used to assess within effects (training and follow-up) and between effects (MD- and Exercise-group).

**Results:** The initial intervention-dependent cardiorespiratory improvement in VT ( $12.2 \pm 3.0$  vs.  $15.1 \pm 3.1$  ml·kg<sup>-1</sup>·min<sup>-1</sup>,  $p < 0.01$ ), was maintained after six months compared with baseline ( $12.2 \pm 3.0$  vs.  $13.2 \pm 3.2$  ml·kg<sup>-1</sup>·min<sup>-1</sup>,  $p < 0.05$ ) with no significant deterioration in the six months after the completion of the intervention. However, no interaction effect was found between MD-group and exercise-group. Within groups comparisons showed a trend, though not significant, towards sustained benefits of the MD group ( $12.2 \pm 2.7$ ,  $14.1 \pm 3.8$ ,  $13.1 \pm 3.7$  ml·kg<sup>-1</sup>·min<sup>-1</sup>,  $p = 0.078$  for main ANOVA effects) in pre-, post-intervention and follow-up respectively. However, this trend was more prominent and significant in the exercise group ( $12.2 \pm 3.3$ ,  $15.6 \pm 3.0$ ,  $13.3 \pm 3.2$  ml·kg<sup>-1</sup>·min<sup>-1</sup>,  $p = 0.010$  for pre-, post-intervention and follow-up respectively).

**Conclusion:** In older sedentary adults, exercise training provides sustained improvement in cardiorespiratory capacity. Combining MD with exercise, though initially effective, require further research to distinguish the specific long-term benefits and adherence to MD.

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\* Official abstract listing can be found at: <http://www.karger.com/Article/Abstract/363668> (page 119)